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ABSTRACT

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Research Report No. 85

APPLICATION OF A DECISION THEORY MODEL TO ELIGIBILITY AND CLASSIFICATION DECISIONS IN SPECIAL EDUCATION

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July, 1982

Abstract

An investigation was conducted of the eligibility and classification decisions of 223 educational professionals who took part in a simulation exercise. The data from their decisions were characterized by much variability and inaccuracy. Fifty-one percent of the professionals declared a student with assessment data in the normal range to be eligible for special education services; 61% indicated the presence of a handicapping condition. A historical background for special education decisions is presented and the Brunswikian Lens Model of decision theory is discussed as a means of understanding the difficulty special educators have in making eligibility and classification decisions. Decision heuristics are proposed as a means by which the educational decision process may be improved.

Application of a Decision Theory Model to Eligibility and Classification Decisions in Special Education

In 1981, the General Accounting Office (GAO) reported that approximately 4.2 million students (8.55% of the total estimated 5-17 year old population) received special education services. Of these special education students, most (67%) were 12 years old or younger and approximately two-thirds were male. In regard to severity of handicap, 13% were reported to be severely handicapped, 36% moderately handicapped, and 51% mildly handicapped. Few children receiving no educational services were found although there was evidence that there are children in school who need, but are not receiving, special education services. These underserved children mainly include those 3 to 5 and 18 to 21 years of age, those in secondary school, the emotionally disturbed, and migrant children. Further, it was reported that the category "learning disabilities" is overrepresented in special education, with 36% of the children served under the provisions of PL 94-142 falling into this category. Finally, the GAO found a number of factors operating that influence not only who gets special education services but also what type of services are received. Some of the factors identified were: teacher attitudes and judgments, state definitions of handicapping conditions, and the child's sex, age, and racial/ethnic identity. From these findings it was concluded that while there perhaps no longer needs to be concern that there are handicapped children who are not receiving any educational services, there are serious problems in determining who gets special education services and what types of services are

provided.

Knowledge of the history of special education in the United States provides a useful context within which to examine its current status. Although some issues have remained the same (see for example, Farrell, 1974; Howe, 1974), the relative importance of other issues has changed substantially. The passage of PL 93-112 (Section 504 of the Rehabilitation Act of 1973) and PL 94-142 (Education for All Handicapped Act of 1975) has meant that educators no longer need to struggle with the issue of whether the severely handicapped child is eligible to receive an education; rather, much of the focus today is on determining which of the students receiving an education are eligible to receive special education services.

Development of Special Education in the United States

Reflective of its separate status from regular education, special education has its own history. The histories of regular and special education began to merge with the rise of compulsory education, which forced the issue of the need of additional assistance for some students (Paul, 1981). However, regular and special education still maintain their own camps.

The history of special education in America has been characterized in several ways. Reynolds and Birch (1977) referred to it as representing a trend of progressive inclusion. Kirk and Gallagher (1979) discussed the development of special education in terms of the most common settings for service: the first 50 years of the American republic were characterized by general neglect; during the next 50 years (1817-1869), service was generally in residential

settings; following this came the beginning and expansion of special classes affiliated with public schools; and, the most recent stage has been that of the mainstreaming movement. Rather than focusing on the physical changes of special education, Zedler (1953) discussed its history in regard to public sentiment toward education and the handicapped. According to Zedler, Americans originally believed that education was a privilege and that it was the right of the local school to decide who was eligible for an education. Reflective of a shift from concern with general welfare to concern with the welfare of the individual, this view was superseded by the view of education as a right for all children. This view has been modified further to the belief that the child has a right to an education suitable to his/her individual needs. It should be noted that Zedler discussed the last point in the context of the specialized, self-contained classes in vogue in the 1950s. An additional stage in this progression might be represented by Kauffman (1981), who stated that the aim of the Education for All Handicapped Children Act is "special education for all handicapped children that will make their education experience and academic performance as nearly normal as possible" (p. 14).

Another way to characterize the advance of special education is by considering the types of students served. The early years of special education focused on those who were most obviously different (i.e., the blind, deaf, and the severely retarded and disturbed); only after the beginning of widespread public education, and particularly after compulsory education laws took effect, was serious consideration given to the mildly handicapped--those whose differences were chiefly

defined by school performance (Kauffman, 1981). In an address at the founding of the International Council for Exceptional Children (ICEC) in 1923, Elizabeth Farrell, ICEC's first president, addressed this issue:

> In the days of Seguin it was thought necessary to segregate in special institutions children who were feebleminded. The result of this segregation was the entire neglect of children suffering minor degrees of intellectual inferiority....The clinical psychologists have shown us that the difference between individuals is a difference in degree of power and not a difference in kind of power. Since this is true, educational training must be designed to meet individual differences. With scientific data at hand, school authorities are no longer justified in providing a standard course to be completed in a standard period of time by all the children in the community. (Farrell, 1974, p. 18)

Perhaps the best examples of the waxing and waning of interest in specific handicaps are provided by mental retardation and learning disabilities. Due in part to the activism of parents of retarded children and to the public support of the Kennedys and Humphreys, mental retardation as a handicap was very prominent in the 1960s and early 1970s. However, interest in mental retardation has been eclipsed by interest in learning disabilities--a category of handicap that did not even exist formally until the early 1960s.

The 1960s and 1970s were marked by increasing involvement of the federal government and the judicial system in special education issues. Until the late 1950s, education was considered to be strictly within the province of state and local governments. A major influence in getting the federal government involved in special education was the Civil Rights movement--the message of which was that the rights of minorities (including the handicapped) found protection in the law

(Kauffman, 1981)--and the Great Society philosophy of the Johnson years (Martin, 1968). Due in large part to the efforts of parent groups such as the Association for Retarded Citizens and the Association for Children with Learning Disabilities, large advances were made in regard to the rights of the handicapped both through the legislative and the judicial process (cf. Bateman & Herr, 1981; Kauffman, 1981; Martin, 1968; Reynolds & Birch, 1977; Weintraub, 1976; Ysseldyke & Algozzine, 1982). The culmination of this activity was the passage in 1975 of the Education for All Handicapped Children Act (PL 94-142).

Activism in the late 1970s shifted from efforts to achieve acknowledgment of the rights of the handicapped to efforts to assure that the provisions of PL 94-142 were implemented properly and the intent of the Act followed. It appears that the next step, influenced once again by the general spirit of the times, will be re-evaluation of the federal government's role in special education and a re-evaluation of the effectiveness of the special education system as defined by PL 94-142 (NASDSE, 1981; Weintraub & Ramirez, 1981).

Role of Classification in Special Education

The making of eligibility and classification decisions has been, and remains, a ubiquitous part of the provision of education services. For many years children were identified as being able to benefit from an education or as not being able to benefit from the public schools' services. This eligibility decision hinged, to a large extent, on how the child was classified (Goldstein, Arkell, Ashcroft, Hurley, & Lilly, 1975). That is, if a child was classified as trainable

mentally retarded, the school generally absolved itself of all responsibility for his/her education. For those children deemed eligible for school, but who needed special assistance beyond what a regular teacher was expected to provide, the child's classification (e.g., mental retardation, emotional disturbance, learning disabilities) essentially determined in what setting the child was taught and what kind of education was provided. The legislative and litigative actions of the 1970s decreed that a free, appropriate education had to be provided to every child regardless of handicap. Thus, eligibility decisions now focus on whether a child is eligible for special education services rather than on whether the child is eligible for school.

There is a growing conviction among educators that the most appropriate education for a child is a program designed for the individual rather than for the category of disability (Martin, 1976; Reynolds & Birch, 1977). This belief receives legal support from PL 94-142, which requires a written individual education plan for each student receiving special services. Despite this, classification remains an integral aspect of the American education system, in part because of the accountability requirements set forth by federal and state funding agencies. Thus, as Goldstein et al. put it, labels (classifications) serve as "passports to education" (p. 17).

There has been much discussion of the pros and cons of classifying children (Algozzine & Mercer, 1980; Burbach, 1981; Hobbs, 1975a, 1975b; Ysseldyke & Algozzine, 1982). Proponents of classification point to valuable administrative functions such as

organization of services, facilitation of communication among professionals, and provision of a structure by which expenditure of funds may be controlled and monitored. On the other hand, several major detriments of classification have been cited, including the potentially serious and long-term social effects of being labeled and the possibility that services provided will be based on stereotypes of the label rather than on the individual needs of the child. To further complicate the issue, if a child is not physically handicapped, but appears to be in need of special education services, he/she is classified into one of three main categories: mental retardation, learning disabilities, or emotional disturbance. Unfortunately, these categories do not have clear, universally accepted, mutually exclusive definitions (Quay, 1973; Reynolds & Balow, 1972; Ysseldyke & Algozzine, 1979, 1982); thus misclassifications easily can occur.

How are Eligibility/Classification Decisions to be Made?

The impetus behind the development of the first intelligence test by Simon and Binet in 1904 was the desire for a means of differentiating mentally retarded children from normal children for educational purposes (Sattler, 1982). Since that time, a large number and wide variety of tests and assessment methods have been used to identify and classify handicapped students. Because of a growing concern with the propriety and adequacy of the assessment procedures in use, a major provision of the regulations for implementing PL 94-142 is a set of rules to be followed when evaluating and placing handicapped students. The main features of the Evaluation Procedures

of the Protection in Evaluation Provisions of PL 94-142 (Federal Register, 1977) are:

a. tests must be valid for the purposes for which they are used and must be administered in a manner that maintains their validity;
b. evaluation materials must include those designed to assess specific areas of educational need;
c. no single procedure can be used as the sole criterion for making a classification/placement decision;
d. the evaluation must be conducted by a multidisciplinary team;
e. the child must be assessed in all areas pertaining to the suspected disability. (Federal Register, 1977, p. 42496)

Further, identification/placement decisions made on the basis of this evaluation information must be made: (a) by a "group of people, including persons knowledgeable about the child, the meaning of evaluation data and the placement options"; (b) on the basis of information from a "variety of sources"; and, (c) "in conformity with the least restrictive environment rules" (Federal Register, 1977, p. 42497).

Factors Accounting for Errors in Classification/Eligibility Decisions

Despite the good intentions of the framers of the Protection in Evaluation Procedures provisions and the equally (usually) good intentions of educators across the country who try to follow these guidelines, classification of children for educational purposes remains a haphazard and inefficient activity. Burbach (1981) proposed that rather than fruitlessly pursuing the issue of whether the labeling process is beneficial or detrimental--an issue that by its very nature can never be resolved--we should be examining the process of labeling and thus try to come to a better understanding of the sources and institutionalization of labeling. The difficulty in

making classification decisions is not due to any one cause or practice, but to a complex combination of factors.

One way to understand the interaction of factors involved in the difficulty decision makers have in classifying children is to consider the problem in the context of the Brunswikian Lens Model. As used by decision theorists, the lens model is a fairly complex model that uses correlation coefficients and regression equations to express and assess the relationship between a judgment and the true, but unobservable, environmental state (the distal state) as mediated by observable proximal cues (Elstein & Bordage, 1979).

Although the actual calculation of relationships can be complex, the basic principles and structure of the lens model is fairly simple and can be useful in an illustrative capacity. As may be seen in Figure 1, a person's judgment about a distal state/environmental event (believed by Brunswik to be probabilistic and generally unobservable) is based on observable proximal cues about the distal state (Brunswik, 1955; Hammond, Rohrbaugh, Mumpower, & Adelman, 1977). The accuracy of the judgment is a function of the predictability of the distal state (environmental predictability), the degree to which the proximal cues are valid and reliable predictors (ecological validity), and the ability of the judge to make use of the proximal cues (cognitive control). To apply this model superficially to the problem of making classification decisions about chidlren, one might consider the classification or eligibility decision to be a judgment about the unobservable true state of the child as mediated by all of the observable assessment data and other available information about the

child. Thus, errors in judgment (classification) can be due to the operation of any one of three major factors: (a) the unpredictability of the true state; (b) the inability of the proximal cues to predict the true state; or, (c) the inability of the judge to make full and appropriate use of the available cues. Available educational research suggests that all three probably are operating when educational classification/eligibility decisions are made about students and mild handicaps.

Insert Figure 1 about here

Unpredictability of the distal state. According to the lens model, educational classifications should represent true states in children; in order for classification decisions to be accurate, these true states must be predictable. They are not. A classification (e.g., learning disabilities, mental retardation, emotional disturbance) means different things to different people, and further, may mean different things to the same person when applied to different children. Thurlow and Ysseldyke (1982) report a wide variety of characteristics that teachers of learning disabled students say represent learning disabilities. Likewise, when a group of nationally known experts in learning disabilities were surveyed by Tucker, Stevens, and Ysseldyke (1982) the identified definitions and characteristics varied greatly. Ysseldyke, Algozzine and Epps (1981) identified 17 definitions of learning disabilities and showed that each definition identified a different subset of students. The

definitions of emotional disturbance and mental retardation currently in use are equally vague and variable.

Reliability and validity of proximal cues. In order for a judge to make an accurate inference about the distal state, the observable cues available to him/her must be reliable and valid predictors. Even taking into consideration the unpredictability of the classifications they are trying to predict, most currently used methods of assessment are not reliable and valid, that is, they are not technically adequate for the purposes of making eligibility and classification decisions (Salvia & Ysseldyke, 1981; Thurlow & Ysseldyke, 1979; Ysseldyke, Algozzine, Regan, & Potter, 1980; Ysseldyke, Regan, & Schwartz, 1980). Few assessment devices have been shown specifically to be technically adequate when used with a handicapped population (Ysseldyke, Algozzine, Potter, & Regan, 1980). Furthermore, scores from a battery of devices commonly used to aid in making classification decisions about learning disabled students were found not to be useful in predicting which students were identified as learning disabled by their school (Ysseldyke, Algozzine, Shinn, & McGue, 1982).

Cognitive control of the judge. Cognitive control represents the extent to which the judge controls the use of his/her knowledge (Hammond & Summers, 1972). This factor is evident in the finding that even when the information available to a set of judges is invariant across judges, the information will be used to arrive at different decisions (Elstein, Shulman, & Sprafka, 1978; Epps, McGue, & Ysseldyke, 1981; Epps, Ysseldyke, & McGue, 1981; Ysseldyke, Algozzine, Regan, Potter, Richey, & Thurlow, 1980). Factors that may be

influential in determining how and how well a judge will use the available cues include: the accuracy of the judges' differential weighting system for the cues (Slovic & Lichtenstein, 1971); the influence of any heuristics used to help organize incoming information (Elstein et al., 1978; Shavelson & Borko, 1979; Tversky & Kahneman, 1974); and, the judges' past knowledge and personal way of organizing information (Newell & Simon, 1972). The notion of "bounded rationality" (Newell & Simon, 1972) proposes that because of inherent limitations on one's cognitive capacity to process information, cognitive representations are simplified into a more manageable form. Bounded rationality might be considered to represent the nature of a judge's cognitive control.

Summary

Special education has gone through a number of stages of development over the course of its relatively brief history. As with regular education, the role and nature of special education over the years has been determined in large part by prevailing public attitudes. Particularly during the past two decades, those with an interest in the rights and welfare of handicapped individuals have proactively sought to improve the public's understanding of the handicapped and to establish as a national value the belief that the handicapped have a right to a life that is as nearly normal as possible. In part, this effort has been successful as evidenced by the passage of PL 93-112 and PL-142. However, because of a persistent desire to dichotomize people into handicapped versus nonhandicapped, remnants of the old order, such as classification decisions, remain.

Unfortunately, because classifications are an arbitrary attempt to categorize the continuous variable of individual differences, accurate and reliable classification decisions often are extremely difficult to make; they rely as much on the subjective judgment of the decision makers as on objective criteria.

Purpose of the Study

Since the advent of PL 94-142 and its guidelines for provision of special education services, some research has been done on eligibility and classification decision making (Applied Management Sciences, 1979; Rucker & Vautour, 1981; Yoshida, Fenton, Maxwell, & Kaufman, 1978). Still, the factors involved in making these decisions remain poorly understood. In response to the need for more information on educational decision making, a simulation of the process was developed. This paper considers the results of two key components of that simulation--the decision to declare a child eligible for services and the decision to classify the child as mentally retarded, learning disabled, or emotionally disturbed.

Method

Subjects

Subjects in this investigation were 223 school professionals from public and private schools in the greater Minneapolis/St. Paul, Minnesota metropolitan area. The subjects included 30 school psychologists, 84 special educators, 28 school administrators, 58 regular educators, and 23 support personnel (e.g., school nurses, social workers, etc.). All subjects had participated in at least two placement team meetings in their home schools. The average age of the

subjects was 38 years; 166 were female and 57 were male.

Procedure

A simulation exercise was developed to reflect the general procedures followed and decisions made by educational personnel when a child is referred by the classroom teacher. The simulation was constructed to reflect three major steps in the referral-to-intervention process: (1) receipt of the referral statement, (2) assessment of the student, and (3) decision making about the student's eligibility and classification.

Each subject was given a 25-item test to measure general knowledge of measurement and assessment principles and practices. Following this, the subject was handed a referral form containing the following information: the child's name, picture, age, grade, and address; the parents' occupations; number of siblings; presence of medical problems; and a short statement of the reasons the child was referred for evaluation. Half of the subjects received referral forms on which the reasons for referral were academic in nature; the other half received forms on which the reasons for referral reflected behavioral concerns. The reasons for referral were phrases in a non-specific manner, such as "reads poorly," or "annoys other children."

After looking at the referral form information, the subject was given access to information on 49 commonly used assessment devices via a Telray remote computer terminal. The subject was allowed 25 minutes to examine test score information on any of the devices. The subject also could request technical information about any device (i.e., information on norms, validity, and reliability taken from test

manuals), as well as qualitative information about the student's performance (e.g., attention span, types of items passed, etc.). All assessment data reflected average pupil performance.

When the subject indicated that enough assessment information had been collected (or after 25 minutes), he/she was asked a series of decision questions on eligibility for services, classification, prognosis, and the perceived influence of various types of information. Finally, the subject was asked to comment on the efficacy of the simulation, that is, how much the simulation resembled the actual decision-making process. Figure 2 is a flow chart of the entire process.

Insert Figure 2 about here

Of specific interest for this paper were four of the decision questions:

1. To what extent do you believe this child is eligible for special education services?
2. To what extent is this child mentally retarded?
3. To what extent is this child learning disabled?
4. To what extent is this child emotionally disturbed?

Data Analysis

Subjects responded to each question using a five-point Likert-type scale where 1 = very likely, 2 = likely, 4 = unlikely, and 5 = very unlikely; the midpoint 3 was unlabeled. In summarizing the data, rankings of 1 and 2 were combined to reflect a positive response and rankings of 4 and 5 were combined to reflect a negative response. A

rating of 3 was considered to reflect uncertainty on the part of the subject. For each of the four questions, the percentage of subjects giving positive responses (i.e., declaring eligibility or classifying student) and the percentage of subjects giving negative responses (i.e., declaring ineligibility or not classifying student) were examined. The classification decisions also were examined as a function of the eligibility decision. This relationship was analyzed further in terms of the specific referral condition, the professional role of the reviewer, and the pretest performance of the reviewer.

Results

Figure 3 is a diagram of the eligibility and classification decisions made by the subjects in this investigation. Of the 223 subjects, 51% (n=114) indicated that the normal student whose case they had reviewed was likely to be eligible for special education services; 27% (n=60) declared the child ineligible for services. The remaining 22% (n=49) used the neutral ranking of 3, thus refraining from making an eligibility decision. Overall, 61% (n=136) of the subjects indicated that the student was likely to be learning disabled, emotionally disturbed, and/or mentally retarded.

Insert Figure 3 about here

Because the classification questions were asked individually, a subject could indicate that the student was likely to reflect more than one of the handicapping conditions. For example, a subject might say that the child was not likely to be mentally retarded, was likely

to be learning disabled, and was likely to be emotionally disturbed. As indicated in Table 1, 8 subjects (4%) stated that the referred student was likely to be mentally retarded, 103 (46%) thought the student was likely to be learning disabled, and 48 (22%) indicated the presence of emotional disturbance. Although 207 of the 223 subjects (92%) recognized that the assessment data did not support classifying the student as mentally retarded, only 55% (n=127) recognized that classifying the student as emotionally disturbed was inappropriate. Even fewer of the subjects (17%, n=60) recognized that the student was not learning disabled according to the provided data.

Insert Table 1 about here

Eligibility and Classification

There were 22 instances in which a subject, after declaring the child to be ineligible for special services, indicated that the child was likely to be mentally retarded, learning disabled, or emotionally disturbed. In 10 of the cases, the child was said to be learning disabled; nine subjects indicated the likelihood of emotional disturbance.

Of those 114 subjects who rated the child as likely to be eligible for special services, 15% (n=17) did not think that the child could be classified into any of the three categories. Only 16 subjects (7%) of the 223 in this study recognized that there was no basis for a decision to declare the student eligible for services or to classify the student. The other 207 subjects either declared the

student eligible for services and/or classified the student, or they indicated that they were not sure of the student's eligibility or classification.

As a function of referral statement. The majority of those subjects who had declared the student eligible for services perceived the student as likely to be learning disabled. This was true whether the referral statement had been academic in nature or behavioral in nature (see Table 2). Of the subjects who had declared the student eligible for special education services, 71% of those whose student had an academically-oriented referral statement said the student was likely to be learning disabled. Students with behavioral referral statements were classified as learning disabled by 64% of those subjects who had indicated eligibility for services. The nature of the referral statement appeared to have more impact when the subjects indicated the likelihood that the student was emotionally disturbed. Twelve percent of the subjects whose student had referral statements that were academic in nature and who said the student was eligible for services indicated the student was likely to be emotionally disturbed. For those subjects whose student had referral statements that were behavioral in nature, 41% of those indicating eligibility considered the student likely to be emotionally disturbed.

As a function of role. Classification decisions in relation to eligibility decisions also were analyzed by the role of professional (see Table 3). Across all roles, when the child was declared eligible for services, the tendency of the reviewer was to say that the student was likely to be learning disabled. Support personnel were

particularly likely to perceive the child as being learning disabled if they were sure the student would be eligible for services. Regular educators were more prone than other professionals to see the student as being emotionally disturbed, regardless of their eligibility decision. School psychologists and support personnel were the most consistent about not classifying students into one of the handicapping categories after having declared them ineligible for services.

Insert Table 3 about here

As a function of knowledge. Scores on the 25-item pretest ranged from 0-24, with a mean score of 12.9. Only one subject answered less than six items correctly; this subject, who answered none of the questions correctly, was dropped from further analyses. Scores were grouped into four clusters: 6-10 (very low), 11-15 (low), 16-20 (high), and 20-24 (very high). Subjects who scored in the high or very high range on the pretest and who had said the child would be eligible for services, were particularly prone to indicate that the child was likely to be learning disabled (see Table 4). For the 22 people who did not think the child would be eligible for services, but who thought the student would be likely to exhibit one of the handicapping conditions, scores on the pretest in the range of 11-15 were the most common.

Insert Table 4 about here

Discussion

Students were declared eligible for special education and were classified despite referral information and assessment data falling in the normal range. Of the 223 school professionals taking part in this investigation, 51% declared the normal student whose case they reviewed as being likely or very likely to be eligible for special education services, and 61% indicated that the student was likely to represent one or more of three handicapping conditions. Furthermore, there were some subjects who declared the student eligible for services but did not classify the student, and some subjects who declared the student ineligible for services but then went on to classify the student as mentally retarded, learning disabled, or emotionally disturbed.

In another, more comprehensive report of this investigation, Ysseldyke, Algozzine, Regan, Potter, Richey, and Thurlow (1980) reported that 81% of the subjects felt that the simulation was a good representation of the actual decision-making process in schools. However, the clear independence of the eligibility and classification decisions and the opportunity to indicate that the student might represent more than one handicap, inherent characteristics of this study, may be atypical of actual school decision making. Because of the method of presenting decision questions in the simulation, subjects may have tended to make decisions without regard to previous responses. On the other hand, the simulation did not include many of the extraneous variables present in actual school settings--variables that may confound the decision-making process.

This investigation examined individual decision-making practices only; however, other studies at the Institute for Research on Learning Disabilities have confirmed that many of these findings are representative of the team decision-making process also. For example, Ysseldyke, Algozzine, Richey, and Graden (1982) found that only 17% of the statements made during a team meeting were relevant to the decision made and that there was a -.13 correlation between statements made during a team meeting that supported the federal definition of learning disabilities and the team decision. These results indicate that there is considerable confusion and uncertainty on the part of educators when it comes to making eligibility and classification decisions. This confusion, it seems, is not restricted to any given professional role or to individuals with a specific level of knowledge about assessment and measurement.

While it seems reasonable to expect eligibility and classification decisions to be based primarily on available objective data, it was apparent that this was not the case for many, if not most, of the subjects in the present investigation. The objective data either were interpreted inappropriately or outweighed by other information, such as the referral statements. Decisions as to whether the student was declared eligible for services, and whether and how the student was classified, varied as a function of both the professional role of the subject (reflecting training and experience) and the estimated knowledge of the subject in the area of assessment and measurement. Unfortunately, for the most part, having greater training, experience, and knowledge about the assessment/decision

making process did not lead to better decisions (i.e., decisions consistent with the data available). Whether the data were being interpreted inappropriately by the subjects, with interpretations being more heavily influenced by individual subject characteristics rather than standard procedures, or whether decisions were based on some factor other than the actual scores (e.g., a subjective "feeling") cannot be ascertained from this study. In any event, it is apparent that some variable or variables were operating in the decision-making process that tempered the influence of objective data.

The classification decisions made by subjects in this investigation reflected the common tendency to label a child as learning disabled when there is nothing to indicate any other handicap. Not only was learning disabilities the most commonly used classification when the subject said the child was eligible for services, but also when the subject indicated ineligibility or unsureness about eligibility. In recent years, perhaps partly due to lack of agreement on a definition of learning disabilities, this category has become, in some cases, a general catchall for underachievers (Ysseldyke & Algozzine, 1979). If a teacher thinks a child is not doing as well academically as he/she should be doing, the child is referred, and, for lack of fitting into any other category, the child is termed learning disabled. This label then allows the school to provide special services, a practice that illustrates Goldstein et al.'s (1975) idea of the label as a "passport to education. While loose application of the label is especially common in the case of learning disabilities, this also occurs with the labels

"mental retardation" and "emotional disturbance."

It is true that our classification systems are less than perfect and categories are not all-inclusive--children are not neat packages designed to fit arbitrarily created categories. An unfortunate result of the inadequacy of our current classification practices is the misclassification of children. Algozzine and Ysseldyke (1981) refer to the provision of special services for children who do not fit criteria of a handicapping condition ("normal" students) as "better safe than sorry." Although this adage may hold true in the case of life preservers and smoke detectors, in education it may lead to a false sense that the child is receiving a good education. Unwarranted classification unnecessarily subjects a child to the negative effects of labeling and leads to the provision of possibly inappropriate educational services. Also, although legislative and litigative actions repeatedly have decreed that lack of resources is not an excuse for not providing necessary special services, educational resources are limited and must be used judiciously (Levin, 1978). Provision of unnecessary or inappropriate services drains resources from areas where they may be used more effectively.

The practice of classification is necessary at times if only as a means of organizing knowledge. Because a decision maker is bombarded with a variety of information, there is a natural tendency to group and categorize this information in order to make it more comprehensible and to use it more effectively (Goldstein et al., 1975; Schiffman, Cohen, Nowik, & Selinger, 1978). The danger arises when information is not properly analyzed and interpreted before it is

categorized. For example, Elstein et al. (1978) found that decision makers tend to form a hypothesis early in the decision-making process and subsequently view even neutral information as confirming that hypothesis. In the present case, it seems likely that subjects formed a hypothesis about the student at the point of referral (e.g., this student was referred for academic problems, therefore, she/he is probably learning disabled, and will need special services) and all of the information that followed was viewed almost automatically as supporting that hypothesis.

In a study of medical decision making reported by Elstein et al. (1978), the use of heuristics as guiding factors in decision making was examined. The position of the investigators was that:

> the dangers of hypothesis-guided diagnostic inquiry should not be countered by struggles to eliminate early hypotheses and their "biasing" effects, but instead by training in diagnostic heuristics that might help physicians to generate more adequate hypotheses and to test these hypotheses more effectively. (p. 253)

The set of heuristics derived by Elstein et al. from studies of the decision-making practices of medical students and used to try to improve the diagnostic decision process is also pertinent to educational decision making. The five heuristics proposed are:

> Planning heuristic. Each piece of information requested by the problem solver should be related to a plan of attack for solving the problem. There should be a plan and a well-defined purpose behind every question or set of questions asked.
>
> Hypothesis-specificity heuristic. No diagnostic hypothesis should be more specific or more general than the evidence on hand justifies.
>
> Competing-hypotheses heuristic. There should always be at least two or three competing hypotheses under consideration at a particular time. Each piece of information should be

evaluated with respect to all hypotheses presently under consideration.

Reinterpretation heuristic. Whenever a new or revised hypothesis emerges, the information previously collected should be reviewed. The problem solver should attempt to categorize the previously elicited findings as either tending to confirm or tending to disconfirm his new hypothesis.

Negative-inference heuristic. When high-cost (expensive, uncomfortable, or risky) procedures are being considered to confirm a favored hypothesis, the problem solver should consider the possibility of lower-cost procedures that might instead rule out one or more diagnostic possibilities in order to make the high-cost procedure unnecessary or to increase the probability that the high-cost procedure will yield the definitive diagnosis. (p. 253)

Elstein et al. (1978) make further refinements in these heuristics, most of which are oriented specifically to medical decision making. However, two corollaries relating to the development of a hypothesis-testing plan also are good guidelines for educational decision practices. These are:

Corollary 1: Diagnostic decisions should be related to treatment alternatives. There is no reason to pursue a differential among diagnoses that will make no difference in the action to be taken, and your data gathering should reflect this.

Corollary 2: There should be a reason for every datum gathered. For example, if a test result does not change your opinion about any of your diagnostic hypotheses, ask yourself why the test was ordered and what range of values could have changed your mind. (p. 297)

According to Hammond and Summers (1972), in the Brunswikian Lens Model, judgment can be increased by improving either "knowledge of the task" (a function of the degree to which the judge knows, or can know, the characteristics of the task) or the cognitive capacity of the judge (i.e., the judge's ability to use available information). Thus, while educators must continue to try to improve their ability to

define the characteristics for the task of classifying children, the use of heuristics, such as those suggested by Elstein et al. should aid in improving the educator's ability to make use of the information available about a student.

Summary

This study indicated that, to an alarming extent, educators are willing to consider an average student eligible for special education services. Furthermore, they are willing to perceive the student as being possibly mentally retarded, learning disabled, or emotionally disturbed despite reviewing assessment data specifically constructed by the investigators to reflect average performance. The avowed purpose of the assessment process as it generally exists today is to provide objective data on which to base educational decisions. It is apparent, however, that not only must decision makers have access to and use technically adequate (i.e., reliable, valid, and appropriately normed) assessment devices, but they also must be trained to use this information, and all of the information they have about a child, in an appropriate manner.

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Table 1

Percentages of Subjects Making MR, LD, and ED Classification Decisions[a]

	MR	LD	ED
Likely	4	46	22
Unlikely	92	27	55
Uncertain	4	27	23

[a]All subjects (n=223) made a decision within each category.

Table 2

Classification of Students Declared Eligible for Services as a Function of Referral Statement

Classification	Type of Referral Statement	
	Academic (n=56)	Behavioral (n=58)
Learning Disabled	71.4%	63.8%
Emotionally Disturbed	12.5%	41.4%
Mentally Retarded	5.4%	1.7%

Table 3

Classification Decisions as a Function of Eligibility Decision and Role of Subject

Role	Eligible			Ineligible			Uncertain		
	% MR	% LD	% ED	% MR	% LD	% ED	% MR	% LD	% ED
School Psychologist	0	69 (n=16)	19	0	9 (n=11)	18	0	67 (n=3)	0
Special Educator	2	76 (n=41)	24	0	25 (n=16)	13	0	26 (n=27)	11
Administrator	11	33 (n=9)	22	14	21 (n=14)	7	20	20 (n=5)	20
Regular Educator	6	57 (n=35)	37	0	13 (n=15)	27	0	13 (n=8)	38
Support Personnel	0	92 (n=13)	23	25	0 (n=4)	0	0	83 (n=6)	17

Table 4

Classification Decisions as a Function of Eligibility Decision and Pretest Score

	Eligible			Ineligible			Uncertain		
Pretest Score	% MR	% LD	% ED	% MR	%LD	% ED	% MR	% LD	% ED
6-10	5	59 (n=41)	34	7	7 (n=14)	29	0	31 (n=13)	31
11-15	4	67 (n=49)	27	3	23 (n=30)	10	5	36 (n=22)	14
16-20	0	92 (n=13)	8	9	18 (n=11)	0	0	10 (n=10)	10
21-25	0	73 (n=11)	27	0	0 (n=5)	40	0	67 (n=3)	0

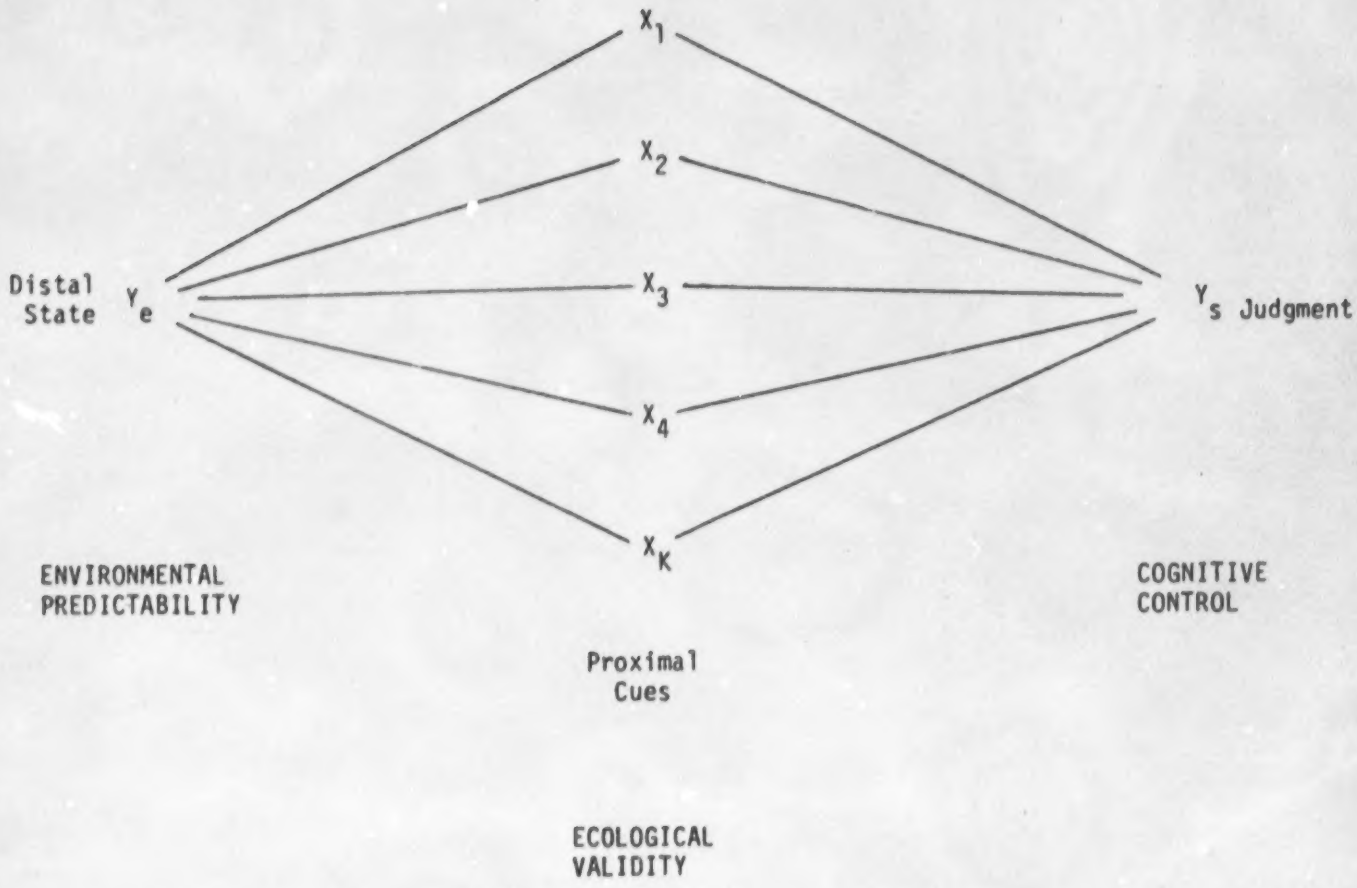

Figure 1. The Brunswikian Lens Model

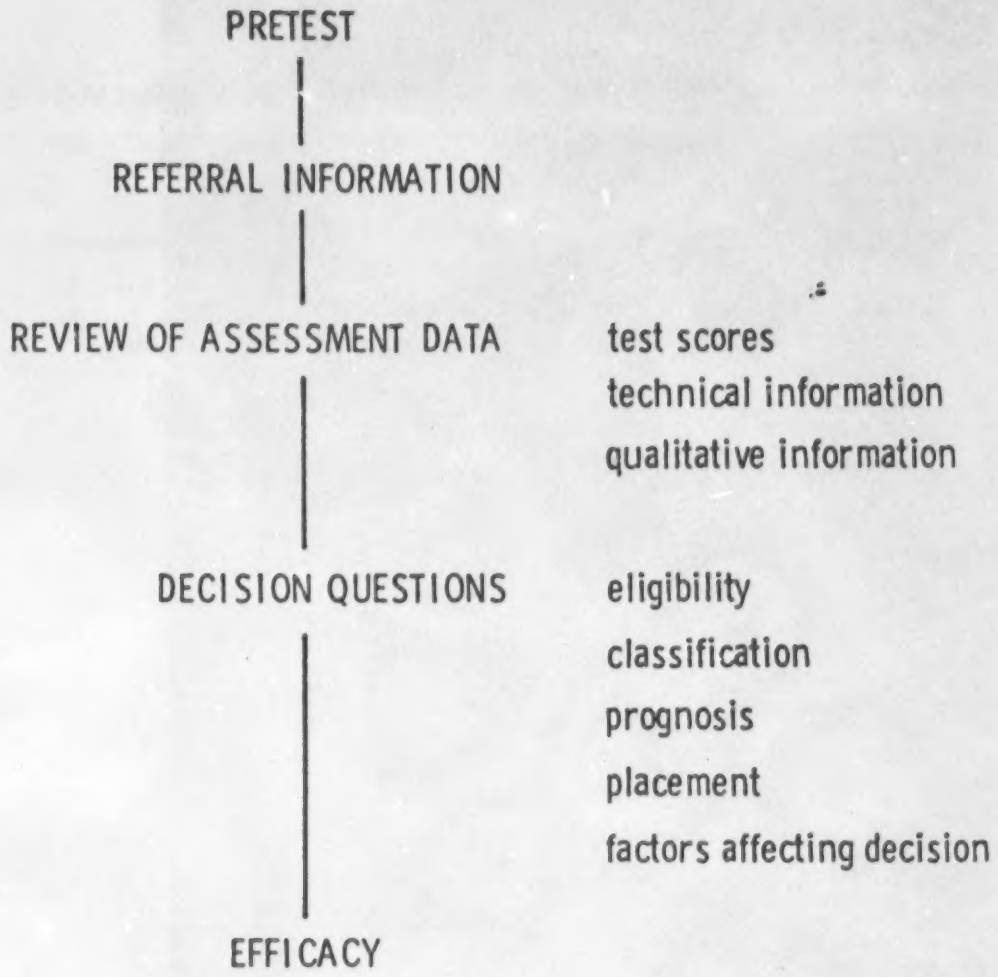

Figure 2. Flow chart of the simulated decision-making process.

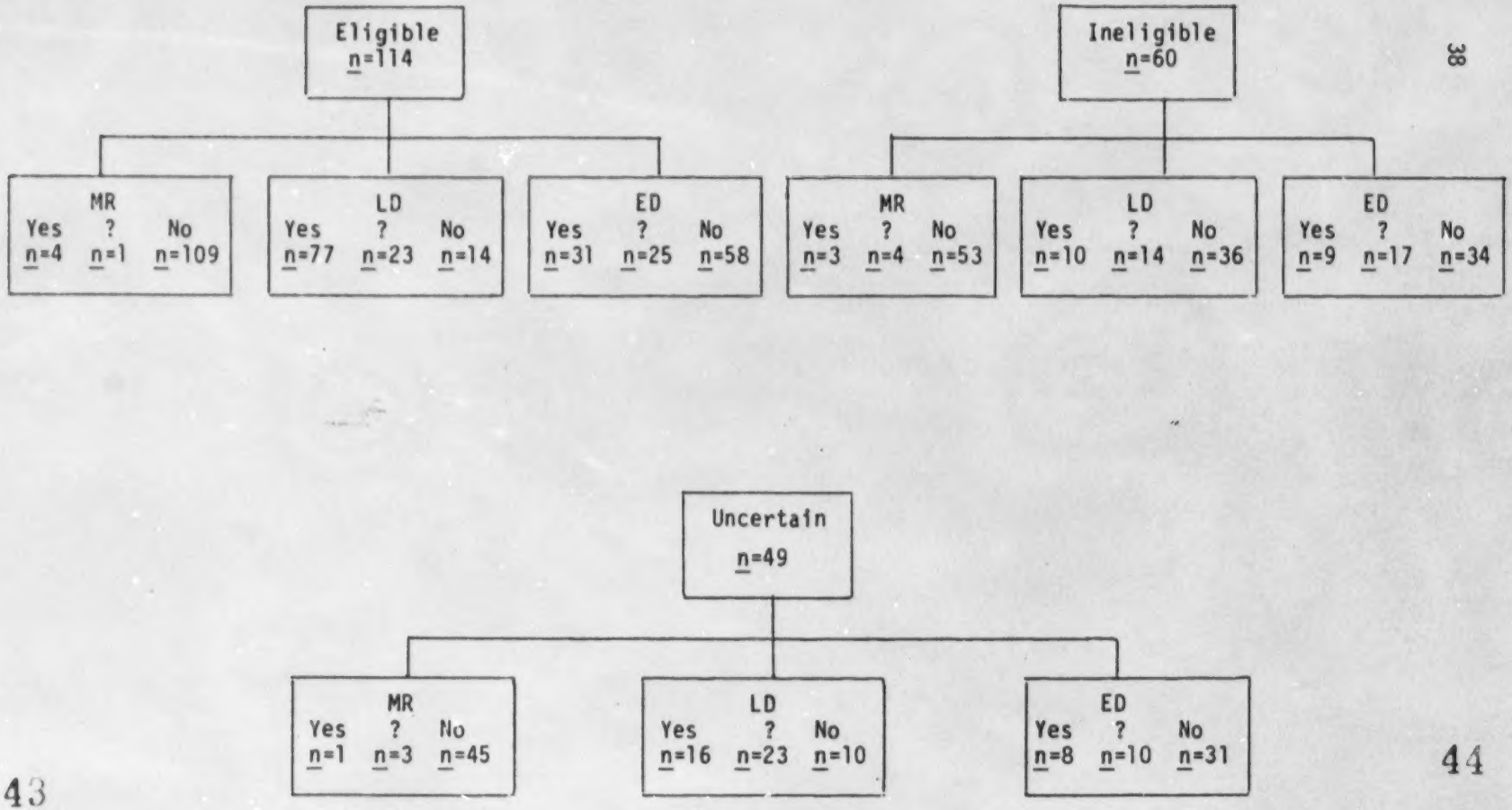

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Figure 3. Eligibility and classification decisions.

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